



## International Journal of Surgery Case Reports

journal homepage: [www.elsevier.com/locate/ijscr](http://www.elsevier.com/locate/ijscr)

## Colonic tuberculosis in an immunocompetent patient

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## ARTICLE INFO

## Article history:

Received 9 December 2012

Received in revised form 10 January 2013

Accepted 22 January 2013

Available online 4 February 2013

## Keywords:

Colonic tuberculosis

Tuberculosis

Colonoscopy in tuberculosis

Tuberculosis in immunocompetent subjects

## ABSTRACT

**INTRODUCTION:** One-third of the world's population is infected with tuberculosis (TB), with intestinal TB representing the sixth most common presentation of extrapulmonary TB. The diagnosis of intestinal TB is a challenge for physicians due to its diverse clinical manifestations that mimic other infectious, autoimmune, and neoplastic disorders, and is thus rarely considered as the causative agent of disease. **PRESENTATION OF CASE:** We present a 55-year-old male with no relevant familial history, who presented due to a loss of 10 kg of weight in 2 months accompanied by nocturnal diaphoresis and continuous abdominal distension.

**DISCUSSION:** The incidence and the severity of intestinal TB are increased in immunosuppressed patients and more rapidly progress due to deficient immune response. However, our immunocompetent had severe progression resulting in surgery less than a month after the diagnosis was made.

**CONCLUSION:** While the diagnosis of intestinal TB, and specifically colonic TB, is difficult and is almost never the first diagnosis entertained outside the immunocompromised population, we present a rare case in which the disease presents in an immunocompetent patient.

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## 1. Introduction

One-third of the world's population is infected with tuberculosis (TB), with intestinal TB representing the sixth most common presentation of extrapulmonary TB.<sup>1</sup> The diagnosis of intestinal TB is a challenge for physicians due to its diverse clinical manifestations that mimic other infectious, autoimmune, and neoplastic disorders, and is thus rarely considered as the causative agent of disease. Therefore, a high index of suspicion is essential to reach the correct diagnosis.

## 2. Case report

We present a 55-year-old male with no relevant familial history, who presented due to a loss of 10 kg of weight in 2 months accompanied by nocturnal diaphoresis and continuous abdominal distension.

He was admitted to our hospital for studies. His complete blood count (CBC) showed microcytic anemia and a fecal occult blood test was performed and returned positive. These findings prompted colonoscopy and gastroesophagoduodenoscopy, which revealed

chronic gastritis and a colonic ulcer that extended throughout the right colon (Fig. 1).

Biopsies were taken from the ulcerated area of the colon. Histopathological analysis demonstrated an acute infectious process and a chronic infectious process with the presence of granulomas (Figs. 2 and 3). The pathologic report suggested the diagnostic possibility of tuberculosis and polymerase chain reaction of the same sample confirmed the presence of *Mycobacterium tuberculosis* DNA.

HIV testing was confirmed negative. A positive PPD test provoked an induration of 12 mm in the forearm at 12 h post-inoculation and a chest X-ray was reported as normal. The subject was discharged with Rifater (rifampin/isoniazid/pyrazinamide) under strict supervision.

Two months after the patient was discharged, he presented to the emergency department with abdominal pain in the left lower quadrant, accompanied by tachycardia, bloody stools, rebound and tenderness, and an abdominal CT was performed. Imaging discovered an abdominal mass obstructing the right colon at the ileocecal valve (Fig. 4) and surgical intervention was immediately prepared.

A right hemicolectomy with ileotransversal anastomosis was performed, with pathologic evaluation of the right colon demonstrating the colonic mass to be filled with granulomas and characteristic multinucleated giant cells. The patient had a satisfactory evolution and was discharged.

At 1 year follow-up the patient is doing well and has finished his course of Rifater treatment.

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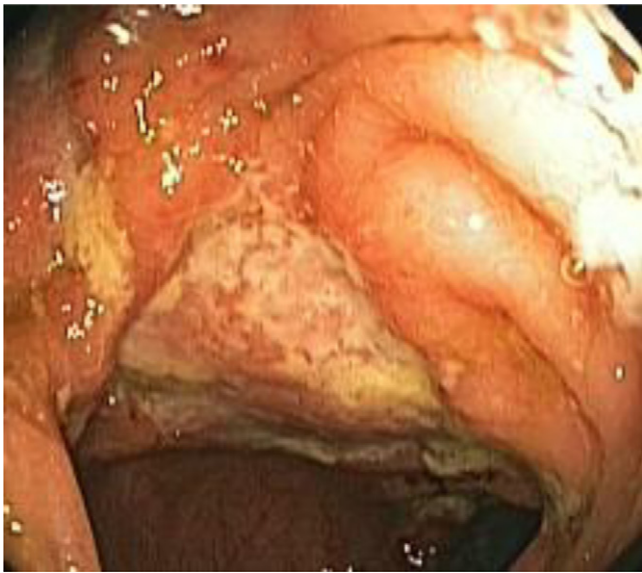


Fig. 1. Colonoscopy image showing an ulcer that extends throughout the right colon.

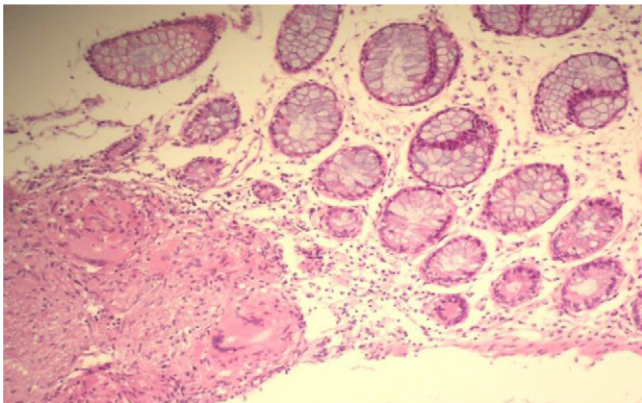


Fig. 2. Granuloma in colon biopsy with multinucleated giant cells.

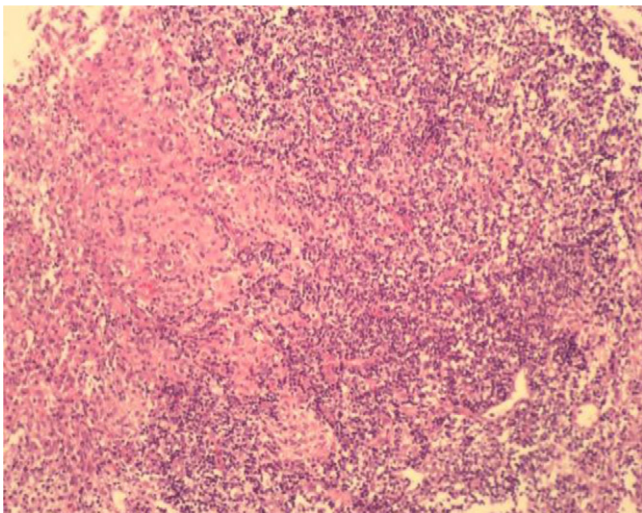


Fig. 3. Granuloma in colon at the center of a lymphoid follicle.

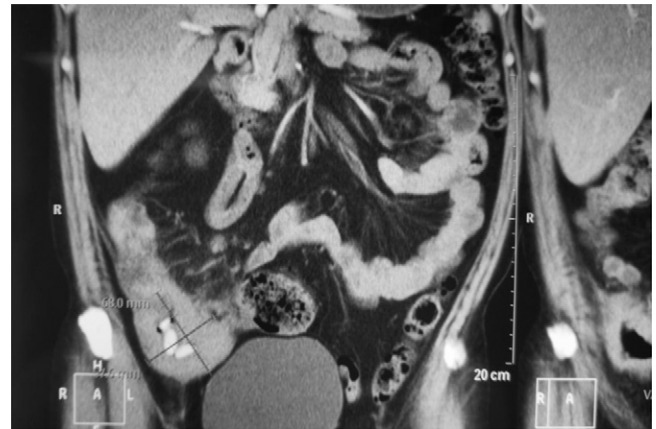


Fig. 4. Abdominal CT showing an obstructive mass in the right colon, at the ileocecal valve.

### 3. Discussion

The incidence and the severity of intestinal TB are increased in immunosuppressed patients and more rapidly progress due to deficient immune responses.<sup>1</sup> However, our immunocompetent patient had severe progression that resulted in surgery less than a month after the diagnosis was made.

In case series reported previously, the main symptoms reported in patients with intestinal TB are chronic abdominal pain, fever, weight loss, changes in bowel habits, abdominal mass, ascites, nausea, and vomiting.<sup>2</sup> In our patient, only two of these major symptoms were present, with weight loss being the main reason for consultation.

Conventional laboratory tests are nonspecific and do not contribute to the differential diagnosis. Elevated erythrocyte sedimentation rate, high C-reactive protein levels, anemia, and lymphopenia or lymphocytosis are common laboratory findings.<sup>3</sup> In our patient, CBC showed anemia and oriented the physicians toward a possible gastrointestinal bleeding. Positive fecal occult blood test prompted the colonoscopy we performed, which led us to the ultimate diagnosis.

Ulcers are the most common colonoscopy finding in patients with diagnosed colonic TB, presenting in as many as 70% of these patients.<sup>4</sup> Our patient demonstrated these same characteristics in his colonoscopy.

Granulomas are found in biopsies in up to 54% of all cases reported by Alvares et al.,<sup>4</sup> and are the most common histopathological lesion in colonic TB. These lesions were also reported for our patient. Even though granulomas occur in both in tuberculosis and Crohn's disease, caseation characteristically typifies tuberculosis. Caseation may be seen in the lymph nodes without concomitant caseation in the colonic biopsy; additionally, it may be totally absent in those who have received antitubercular therapy in the past.<sup>5</sup> In our case, caseation was not reported by the pathologist. PCR is one of the confirmatory diagnostic tests used when there is diagnostic doubt between TB and other diseases.<sup>4</sup> Histopathologic analysis suggested colonic TB as a diagnostic probability, leading us to order the PCR test of the same specimen. The positive presence of *Mycobacterium tuberculosis* DNA conclusively confirmed our diagnosis of colonic TB.

The Mantoux test is positive in 70–86% of patients, but has limited usefulness in immunosuppressed patients.<sup>5</sup> In our case, the Mantoux test returned positive, which is expected in an immunocompetent individual.

A minority of patients with intestinal TB report prior history of TB infection yet more than 50% have a normal chest X-ray.<sup>4</sup> Our

patient had a normal chest X-ray and no previous history of TB, which, as reported, is not uncommon.

#### 4. Conclusion

While the diagnosis of intestinal TB, and specifically colonic TB, is difficult and is almost never the first diagnosis entertained outside the immunocompromised population, we present a rare case in which the disease presents in an immunocompetent patient. However, as rates of tuberculosis rise and as many as one-third of the world's population are already infected, intestinal TB should be considered on the differential diagnosis of patients presenting with similar sequelae of intestinal disease. Our case illustrates that, while uncommon, intestinal TB can have a torpid course even requiring emergency surgery despite adequate treatment.

#### Disclosure

The patient consent was obtained at the first hospitalization; our local ethics committee reviewed the case prior to its submission for publication.

#### Conflict of interest statement

No conflict of interest for any of the authors in this case report.

#### Funding

No funding was received specifically for this study.

Jacob Donoghue is supported by award Number T32GM007753 from the National Institute of General Medical Sciences. The content

is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of General Medical Sciences or the National Institutes of Health.

#### Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

#### Author contributions

Gregorio Zubieta-O'Farrill performed data collection and analysis. Juan de Dios del Castillo-Calcano did data collection and writing. Carlos Gonzalez-Sanchez and Eduardo Villanueva-Saenz did data collection while Jacob A. Donoghue did the writing job.

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